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ABSTRACT

As part of a larger project concerned with the development of changes in children's understanding of meaning as they become literate, this study examined the age at which listeners begin to acknowledge paraphrasing as a legitimate response to questions about the utterances of characters in stories. Subjects were 54 native English speakers from middle-class day care centers and schools in a large urban area who ranged in age from 3 to 9 years. Eight simple stories involving Sesame Street characters (four warm-up stories and four experimental stories) were developed for the study, with each story containing four to five sentences that described a common event. An utterance from one of the characters became the target sentence for subsequent paraphrasing. There were four possible conditions for each of the test stories: true paraphrase, false paraphrase, true verbatim, and false verbatim. Results showed that the children could not judge two utterances to be different in form yet equivalent in meaning until the age of 6 or 7 years. Results also indicated that younger children had particular difficulty in excluding a good paraphrase when they were asked to accept only a verbatim utterance. (MM)

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The Development of the Distinction Between Paraphrase and Exact Wording in the Recognition of Utterances[1, 2]

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Abstract

As part of a larger project concerned with the development of children's understanding of meaning as they become literate, the current study considers at what age listeners begin to acknowledge paraphrase as legitimate responses to questions about the utterances of characters in stories. In order to easily allow children the possibility of rejecting another's version of the target utterance, we employed a variation of the *talking Panda* technique (Lloyd & Donaldson, 1976) in which children judged whether a teddy bear had correctly or incorrectly responded to questions about what a character in the story had "said" or had "wanted." Subjects were 54 native English speakers ranging in age from 3:0 to 9:9 years. Findings suggest that it is not until the age of 6 or 7 that children can judge two utterances to be different in form and equivalent in meaning. Younger children have particular difficulty in excluding a true paraphrase when asked to make a verbatim judgment. We infer that literacy contributes to an understanding of the differentiation of the form of an expression from its meaning.

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The Development of the Distinction Between Paraphrase and Exact Wording in the Recognition of Utterances

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Introduction. This study is part of a larger project concerned with the development of changes in children's understanding of meaning as they become literate. In particular, this study explores children's developing notions of paraphrase as being equivalent in meaning to the actual text of a story. Our concern is to determine at what age children begin to acknowledge paraphrases as legitimate responses to questions about the utterances of characters in stories.

While paraphrase has been used as a technique for studying other aspects of oral and written language development (Geva & Olson, 1983), little research has been undertaken on the development of the concept of paraphrase, a metalinguistic achievement which no doubt forms the basis for many of the interpretive activities which will continue to develop into adulthood, such as reflective reading and writing and critical thinking. The program of research we are currently undertaking is directed to an understanding of how the concepts of saying, thinking, meaning and understanding develop in children throughout the preschool and early school years, both in oral and in written contexts. As part of this program of research, the current study considers at what age listeners begin to acknowledge paraphrase as legitimate responses to questions about the utterances of characters in stories. Previous research on this question by Hedelin and Helmquist (1988) employed a technique in which children were asked to judge whether paraphrases were acceptable versions of *what was said*. So, for example, if the target utterance was "The hippopotamuses want to eat," the child was asked "Did she say 'The hippopotamuses are hungry?'" They found that the younger children tended to accept paraphrases as being what was said more often than older children. By age 5 they rejected them. One possible explanation which they

offered for their data was a tendency for the younger children to accept as correct anything said by an adult. With this possibility in mind, we set out to devise a methodology which might more easily allow children the possibility of rejecting another's version of the target utterance. To do this, we adapted a technique first used by Lloyd and Donaldson (1976) and subsequently revised by Astington and Olson (1992) to study children's evaluation of truth or falsity in negative sentences.

Methodology. Eight simple stories involving Sesame Street characters were developed for the study. Each story was four or five senfences in length, described a common event and involved an utterance from one of the characters. This utterance occurred in the middle of the story and became the target sentence for subsequent paraphrasing. Four of the stories were used as warm-up and training items and four stories were experimental test items. Test utterances were developed for each of the four stories such that the target utterance could be paraphrased correctly or incorrectly (wording changed, meaning preserved or altered) or repeated verbatim correctly or incorrectly (meaning preserved, wording identical or altered). In fact, only three test utterances were needed to fulfill these four conditions as the test utterance for correct paraphrase and incorrect verbatim can be identical. Instructions to the subject (see below) determine how the test utterances are to be judged. Thus there were four conditions for each of the test stories; a true paraphrase condition, a false paraphrase condition, a true verbatim condition and a false verbatim condition. Following is a sample story with endings:

> Big bird and Snuffy go to Maria's for lunch. Big Bird says **I want some food.** Snuffy sits down at the table. Big bird goes into the kitchen. Big Bird helps Maria.
>
> True verbatim - I want some food.
> True paraphrase / False verbatim - I want something to eat.
> False paraphrase - I want some toys.

The following methodology was employed in order to make the task more accessible to three-year-olds. Each child was seen individually and introduced to a large teddy bear. They were given instructions either for the paraphrase condition first or the verbatim condition first. The child was told that Teddy was learning to listen, that he sometimes made mistakes and said the wrong thing. Teddy would listen to some stories and would have to say what the person in the story *wanted* in the case of paraphrase condition, or *said* in the case of exact words condition. The child was to help Teddy by listening to what Teddy said and giving him a sticker if his utterance was right or not giving him one if his utterance was wrong.

Specific instructions for the Paraphrase condition included "Teddy has to listen carefully for what the person in the story wanted. Teddy, you don't have to use the same words. Just tell us what the person wanted. Let's see how good a listener Teddy is. When he says it right, give him a sticker. When he says it wrong, say 'No sticker, Teddy.' Here's the first story. Remember Teddy, I want you to listen for what the person wanted, you don't have to say the same words." The Experimenter then read the paraphrase stories which were also enacted with a small set of Sesame Street dolls. Two training stories were read and enacted before the test stories, one involving a true paraphrase and the other involving a false paraphrase. In every story, the child was asked to repeat the target utterance as soon as it was read (E: "What did Big Bird say? He said 'I...'" Ch: "want some food") to minimize memory and attention problems interfering with task performance.

At the end of the story, the Experimenter questioned the child in the following way: "OK. Now we're going to see how well Teddy listens. Teddy, what did Big Bird tell Maria? Remember, you don't have to use the same words. Teddy (in a small voice): "Big Bird said I want somethin to eat" (True paraphrase). Did Teddy listen right or wrong? Does he get a sticker or no sticker?" In the training stories, the Experimenter

worked with the child until the child agreed with E about whether Teddy would get a sticker or not. Each child was given a true and a false training item. The paraphrase training stories were followed immediately by the paraphrase test stories, the order of true and false paraphrase items were counterbalanced across Subjects. Half the Subjects received the paraphrase stories before the verbatim stories, half received the verbatim stories first. Instructions in the verbatim condition were similar but directed toward verbatim recall: "Teddy has to listen carefully for what the person said." "Teddy, I want you to listen for exactly the same words." "Teddy, say exactly what Big Bird said. Use the same words." As with the paraphrase stories, the order of true and false verbatim stories was counterbalanced across subjects.

Data Source. Fifty-four children from middle-class daycares and schools in a large urban area were Subjects in the experiment. The children ranged in age from 3:0 to 9:9 years of age and all were native speakers of English. Nineteen children were between 3:0 and 4:0 years of age; thirteen were between 4:0 and 5:0 years of age; thirteen were between 5:0 and 6:0; and nine were between 6:0 and 9:9 years of age.

Results. Responses were scored as correct if Subjects gave stickers to Teddy for the true paraphrase or true verbatim items and withheld stickers for the false paraphrase or false verbatim items. Each subject received a score of 1 in the verbatim condition if they answered correctly on both the true and false verbatim items and 0 if they were wrong on either or both of the items; similarly, they received a score of 1 in the paraphrase condition if they answered both true and false paraphrase items correctly, otherwise they received a score of 0.

The number of subjects getting neither verbatim or paraphrase conditions correct, getting either verbatim or paraphrase conditions correct, or getting both verbatim and paraphrase conditions correct were tabulated for each of the four age groups. These data are shown in Figure 1. A Chi-square analysis performed on the frequencies for neither,

either or both correct, revealed significant age differences in responding, Chi-square $_{(6)}$ = 21.97, $p < .001$. Further analysis revealed that when children get only one of the conditions correct, it is nearly always the Paraphrase condition, Fisher's Exact Test, $p < .01$.

Insert Figure 1 about here

The results indicate that 58% (11 out of 19) of the 3 - 4 year olds tested were unable to judge whether one utterance was equivalent to another, whether instructed to pay attention to the words (equivalence in form) or to pay attention to the meaning (equivalence in meaning), 37% (7 of 19) were correct in one condition or the other, 3 children scoring correct in the verbatim condition and 4 scoring correct in the paraphrase condition. Only one subject (5%) was correct in both the verbatim and paraphrase conditions. Scores in the 4 - 5 year old and the 5 - 6 year old groups were markedly better and identical to each other. In each of these groups, 23% (3 of 13) scored correct in neither condition, 54% (7 of 13) scored correct in the paraphrase condition only, and 23% (3 of 13) scored correct in both verbatim and paraphrase conditions. Subjects in the older group (6 years and older) performed better than the younger two groups, 22% (2 of 9) were correct in the paraphrase condition only while 78% (7 of 9) scored correct in both the verbatim and paraphrase conditions.

Note that 37% of all subjects (20 of 54) were able to respond correctly to both the true and false paraphrase items but were unable to respond correctly to both true and false verbatim items, as opposed to three 3-year-old subjects who correctly answered the verbatim items and failed to answer the paraphrase items.

To further examine the source of children's errors in this task, responses were tabulated for the four individual items, True Verbatim, False Verbatim, True Paraphrase and False Paraphrase, and age effects were assessed. These data are shown in Figure 2.

Insert Figure 2 about here

Chi-squares performed on the individual items were significant only for False Verbatim items (Chi-square $_{(3)} = 10.51$, $p < .05$) and for False Paraphrse items (Chi-square $_{(3)} = 22.44$, $p < .001$). While only the 3 - 4 year olds had difficulty saying *No* to a false paraphrase (meaning altered), most children under age 6 had difficulty saying *No* to a false verbatim (meaning preserved, wording altered).

Conclusions. The data suggest that most 3 to 4 year old children are unable to make accurate judgements comparing the wording of utterances which may be equivalent in meaning (the verbatim condition), nor can they make accurate judgements comparing two utterances which may differ in meaning (the paraphrase condition). This failure suggests that very young children either lack a notion of equivalence for language structures or lack the knowledge of language structures (including the vocabulary) which would make a task such as this accessible to them. In all likelihood, knowledge of the language structures is a prerequisite for developing concepts such as equivalence either of wording or of meaning. We see this knowledge emerging in the 4- to 6-year-old who is more likely to correctly accept true paraphrases and reject false ones but who still has great difficulty detecting the wording changes in semantically equivalent utterances. Indeed the most difficult task for these children is to reject a good paraphrase when instructed to accept only exactly what was said, "the same words." This confirms earlier findings (Torrance & Olson, 1987; Robinson & Robinson, 1977; Robinson, Goelman & Olson, 1983) that children under the age of 6 or 7 have difficulty distinguishing a speaker's intended meaning from what was said. Finally, we see in

the child who is 6 years of age or older the emerging ability to detect, on the one hand, the difference in wording of two utterances which are equivalent in meaning (false verbatim) and, on the other hand, to detect in these same utterances an equivalence in a different context (as true paraphrases).

It may be argued that what we are really seeing is a methodology which is too complex or too difficult for the three-year-old, and that their failure with these questions reflects only their failure to understand our instructions. However, we would argue that it is the lack of knowledge of the language structures which makes the task instructions less accessible to the younger child, that mastery of expressions like "use the same words" or "say it in different words" reflect mastery of the underlying knowledge structures which are developing in the pre-schooler, the very structures which will enable the somewhat older child to make reasonable judgements about the equivalence of two or more utterances.

Educational Significance. In this study, we have considered one aspect of the child's developing skill in the interpretation of language, namely the development of paraphrase. We find that it is not until the age of six or seven that children can judge two utterances to be different in form and equivalent in meaning. We believe that this form of metalinguistic awareness gives rise to the possibility of consulting texts as independent evidence for determining appropriate interpretations of utterances or statements, a skill which becomes essential for reflective reading and writing, and for critical thinking. We infer that the notion of "verbatim" repetition is an aspect of literate competence.

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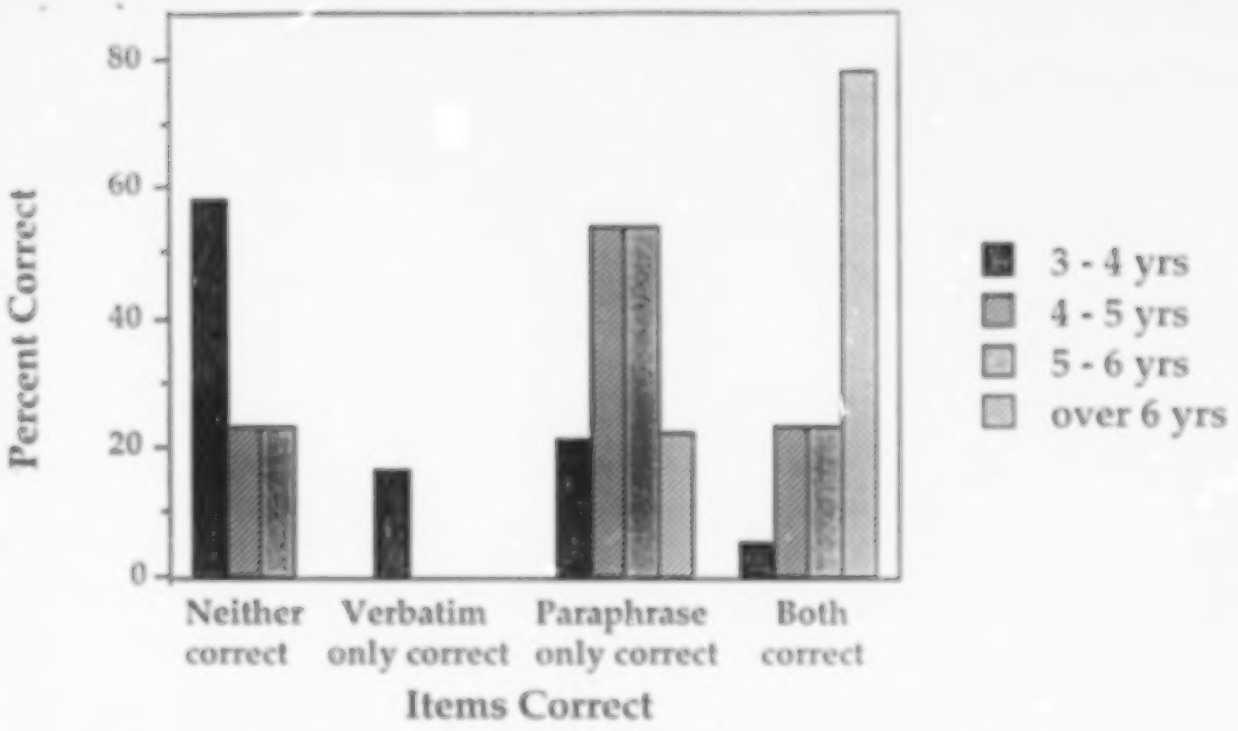

Figure 1: Percent Correct to Verbatim and Paraphrase Items By Age

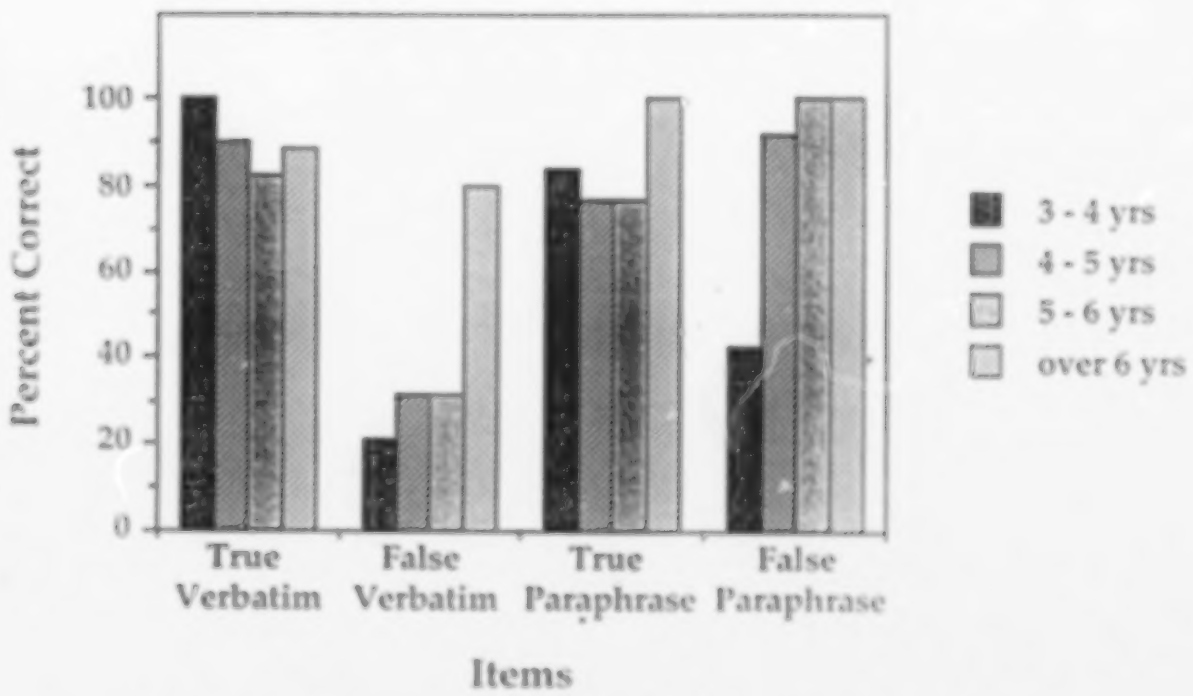

Figure 2: Percent Correct By Item By Age